Remarks/Arguments:

Reconsideration of the application is requested.

Claims 1-26 remain in the application.

In the second paragraph on page 2 of the above-identified Office action, claim 1-26 have been objected to because of the following informalities.

More specifically, the Examiner has stated that the words vias, trenches and recess are redundant. It is respectfully noted that the term vias is not found in the claims of the instant application. Regarding terms trench and recess, the term trench is used to define the shape of the recess versus for example a pit recess as is shown in Fig. 3a and is described on page 21, lines 1-8 of the specification. Accordingly, the terms trench and recess are not believed to be redundant. Therefore, the claims have not been amended to overcome the objection by the Examiner.

Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the matter may be resolved.

In the fourth paragraph on page 2 of the Office action, claims 1-17, 19, 25, and 26 have been rejected as being fully anticipated by Kawai (U.S. Patent No. 6,239,033 B1) under 35 U.S.C. § 102.

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, *inter alia*:

the second main surface having at least one void selected from the group consisting of a trench recess and a pit recess formed therein for increasing a coupling-out of radiation from the window.

All the references cited by the Examiner essentially pertain to laser diode components, in particular, edge emitting laser diode components.

In edge emitting laser diode components, the emission direction of the laser radiation is parallel to the plane of the active layer. The resonance which is necessary for the laser activity is reached by way of the reflecting facets of the semiconductor body which create a resonator that is commonly orientated perpendicular to the main extension direction of the semiconductor layer sequence and which seal the semiconductor body at its edges. A coupling-out of the radiation generated in the active layer, perpendicular to the main extension direction, negatively influences the laser and is therefore usually undesirable.

However, in a radiation-emitting semiconductor component according to the instant application, a recess is provided in a window layer, which increases the coupling-out of the radiation from the window layer.

The Kawai reference discloses that by means of a recess extending through a substrate, the electric contact to a semiconductor layer sequence generated on the substrate, which is embodied according to a FET (Figs. 2-13) or according to an edge-emitting laser (Figs. 1 and 14), is to be improved. To this end, the semiconductor layer sequence has optical guide layers (105, 107 in Fig. 1 and 55, 57 in Fig. 14), which guide

the laser radiation to the edge surfaces of the semiconductor layer sequence.

For this purpose, in the exemplary embodiment of Kawai shown in Fig. 14, which shows a radiation-emitting semiconductor component and not an FET, a contact material is filled into the recess (61) in order to electrically contact the semiconductor body by way of the layers (52 or 53). In the edge-emitting laser diode component of Kawai, radiation is emitted parallel to the layer plane, for example, by way of the active layer (56). For this purpose, the optical guide layers (55 and 57) guide the radiation to the edges.

The reference does not show the second main surface having at least one void selected from the group consisting of a trench recess and a pit recess formed therein for increasing a coupling-out of radiation from the window, as recited in claim 1 of the instant application.

Kawai does not disclose how the recess (61) in the substrate (5), in which an n-side electrode (62) such as a Ti/AL film, which might be reflecting and which is applied in a holohedral manner (column 13, lines 45-52), is to increase the coupling-out of the laser radiation out of the substrate, which emits parallel to the substrate (51). Instead, the rear side

contact is created by a possibly reflecting material, which prevents a coupling-out of the radiation through the substrate. Kawai does not disclose a radiation coupling-out through the substrate, which is increased by the recess (61).

This is contrary to the invention of the instant application as claimed, in which the second main surface has at least one void selected from the group consisting of a trench recess and a pit recess formed therein for increasing a coupling-out of radiation from the window.

Since claim 1 is believed to be allowable, dependent claims 2-17, 19, 25, and 26 are believed to be allowable as well.

In the third paragraph on page 3 of the Office action, claims 22-24 have been rejected as being obvious over Kawai (U.S. Patent No. 6,239,033 B1) in view of Ichihara (U.S. Patent No. 5,814,532) under 35 U.S.C. § 103. Ichihara does not make up for the deficiencies of Kawai. Since claim 1 is believed to be allowable, dependent claims 22-24 are believed to be allowable as well.

Even though claims 22-24 are believed to be allowable, the following remarks pertain to Ichihara.

Ichihara also pertains to edge-emitting laser diodes. Ichihara discloses that the structuring of the substrate (10) (Fig. 3) is only for limiting the negative effects of radiation R (i.e., noise caused by the radiation) on the function of the component, which enters on the semiconductor body or the substrate. In this case, the emission direction S of the radiation of the laser diode is also parallel to the active layer plane (13). Ichihara does not disclose that the recess in the substrate (10) increases the radiation coupling-out of the laser radiation emitted parallel to the layer plane of the active layer (13) from the substrate.

In the second paragraph on page 4 of the Office action, claims 18 and 21 have been rejected as being obvious over Kawai (U.S. Patent No. 6,239,033 B1) in view of Wong et al. (U.S. Patent No. 6,562,648 B1) (hereinafter "Wong") under 35 U.S.C. § 103. Wong does not make up for the deficiencies of Kawai. Since claim 1 is believed to be allowable, dependent claims 18 and 21 are believed to be allowable as well.

Even though claims 18 and 21 are believed to be allowable, the following remarks pertain to Wong.

The Wong reference discloses the removal of a substrate, which is unsuitable for the electric and thermal rear side

contacting of an edge-emitting laser diode array having a low thermal or electric conductivity. By bonding on a substrate of a higher conductivity, the electric or thermal contacting of the laser diode arrays, in the form of a common rear side contact, is made possible means of the bonded substrate. Wong does not disclose a recess in the bonded or removed substrate, which increases the coupling-out of radiation from the substrate. Similar to Kawai, the metal back-contact layer (1121) is formed of a possibly reflecting material such as Ti/Al.

In summary, Kawai, Ichihara, and Wong all pertain to edge-emitting laser diode components, which emit parallel to the active layer and not through the substrate. Furthermore, none of the references discloses how a recess in a window layer increases the radiation coupling-out through the window layer. Instead, in Wong a possibly transparent substrate is removed at the expense of a conductive substrate and in Kawai the substrate is completely covered with a reflecting layer.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since

all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-26 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel respectfully requests a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made.

Please charge any other fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner & Greenberg P.A., No. 12-1099.

Respectfully submitted,

Alfred K. Dassler
52,794

For Applicant(s)

AKD:cgm

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Lerner and Greenberg, P.A.
Post Office Box 2480
Hollywood, FL 33022-2480
Tel: (954) 925-1100
Fax: (954) 925-1101